

OTS: 60-11,510

JPRS: 2524

21 April 1960

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PROTECTION OF AN INFANTRY COMPANY AGAINST WEAPONS  
OF MASS DESTRUCTION IN DEFENSE

- USSR -

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19981208 060

REF ID: A64444 FILE

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205 EAST 42nd STREET, SUITE 300  
NEW YORK 17, N. Y.

JPRS: 2524

CSO: 3679-N

## PROTECTION OF AN INFANTRY COMPANY AGAINST WEAPONS OF MASS DESTRUCTION IN DEFENSE

[This is a translation of an article written by M. Sergeychuk in Voyennyj Vestnik (Military Herald), No 10, 1959, pages 30-34.

The protection of subdivisions against weapons of mass destruction, which is the most important aspect of security in combat, is organized for the purpose of preserving their fighting capacity under conditions of the employment of an adversary of atomic weapons, and of poisonous and bacterial methods. This is accomplished by carrying out systematically, by all commanders, a series of measures directed toward the greatest possible minimization of the effect of atomic weapons and other methods on people, weapons and equipment, based on actual conditions and possibilities.

In organizing protection against weapons of mass destruction in defense, the commander of a company usually acquaints his subordinates with signals giving warning of the danger of an atomic or chemical attack by the adversary and indicates the sequence of actions to be taken according to these signals; assigns tasks to the observers engaged in radiation, chemical and bacteriological observation and, to specially selected soldiers, tasks for conducting radiation and chemical reconnaissance; checks the presence and proper functioning of the individual methods of antichemical protection; indicates the order of the engineering equipment of the company's district and measures to be taken for camouflage; establishes strict control over the maintenance of proper sanitary-hygienic conditions in the positions occupied and over the observance of personal hygiene by all the personnel and, finally, provides for measures nullifying the consequences of the employment of means of mass destruction by the adversary.

Observation is organized in every platoon. To the company observer, the company commander points out the sector and objects of observation, the warning signals and the order of their operation. He should be situated in a spot from which it is easy to see the infantry platoons and the units attached to them and also to maintain visual contact with the chemical observation posts of the battalion.

Here it is desirable that the company observer have an instrument that signals automatically when a contaminant is revealed or indicates immediately, which permits us at once, after a chemical attack, to determine the concentration of the toxicant in the air,

and primarily of the highly toxic and rapidly-acting contaminant.

Radioactive contamination is detected by means of a radioactive indicator which is switched on by the observer every five to ten minutes depending of the circumstances.

It is very important that the personnel familiarize itself fully with the warning signals of a threatened atomic or chemical attack by the adversary and the sequence of actions to be taken so as to act quickly and according to the organized plan. These signals are usually determined by the superior commander. In the company, there are duplicated by various means: from the company commander down to the platoon commander -- by radio; from the company observer to the platoon ;observer -- by means of rockets, sirens and also by voice.

On receiving the signal of an atomic threat, the entire personnel places the various methods of antichemical protection in a state of readiness and occupies the shelters prepared in advance. If there are not enough shelters for the company, it takes cover in pits, canals, trenches and other folds of the terrain. Observers and personnel at firing positions remain in their places. At the instant of atomic explosion they also take cover in their trenches.

After the passing of the shock wave, the personnel, on order by the commanders, don gas masks, protective stockings and gloves and occupy their assigned positions in readiness to repulse the attack of the adversary subsequent to the atomic assault. The company observer follows the movement of the radioactive cloud and determines the degree of radioactive contamination of the locality.

On receiving the warning signal of a chemical attack, the personnel don gas masks and, if circumstances permit, occupy shelters of the light type; observers and the units on duty at the gun emplacements remain at their positions. That part of the personnel which at the time of the chemical attack is inside the shelters is also notified, so that it can undertake defensive measures in time. When the adversary has initiated an attack after a chemical assault, the personnel immediately occupy their assigned positions and repulse the attack within the framework of their defenses.

Vigilance must be intensified during the night. With this purpose in mind we have practices, in practical training, the placing of special chemical observer points. Such posts, from every company, are placed 200-300 meters in front of the foremost defensive rim. In working out the themes of "Infantry Platoon in Defense" and "Infantry Company in Defense," we charged them with the task of detecting the preparations of the adversary for the application of poisonous smoke. The release of poisonous smoke is simulated by means of special hand grenades. Having detected the start of smoke release, the post gives the arranged signal by a rocket or by the

frequent flashing of a flashlight. The observers of the platoons and of the company, after receiving the post's signal, immediately report to the commanders and sound their warning signals (either by voice, shouting "gas," or by frequent blows on a cartridge case). The personnel of the company then don gas masks.

In working out the activities of such a post, we not only attain an improvement of night observation but also solve a number of other problems. For instance, this makes it possible to train the personnel in vigilance and speed in applying gas masks. Furthermore, the personnel get used to operating with gas masks over a protracted period (3 -- 5 hours). This is very important since in the course of battle, an adversary, employing chemical weapons, will attempt not only to inflict defeat but also to exhaust the personnel, subjecting it to protracted action by chemical weapons and thus forcing it to wage battle under conditions of antichemical protection.

As has already been noted, the presence of toxic substances and radioactive contamination within the location of the company is determined by means of an instrument of chemical reconnaissance and by a radioactivity indicator.

In our opinion, the commander of a company should be equipped with a roentgenometer, since it is necessary for him to know the degree of contamination in the positions of every platoon, to what approximate dose the personnel has been subjected, and what measures to take in the given circumstances.

For the organization of chemical and radiation reconnaissance in defense, it is necessary to have well-trained sergeants and soldiers who know how to handle dosimetric equipment.

A specific feature of radiation reconnaissance in defense is the necessity of measuring the degree of radiation in trenches, communication trenches, and shelters occupied by the personnel. In order to collect all the required data quickly, the company commander appoints 2 -- 3 chemical patrols. Thereafter, repeated reconnaissance of contaminated sectors is provided for in order to gain more precise data on the levels of radiation at sites where the personnel is located and to check any change in these levels with time.

The engineering equipment of the company's defense sector must of necessity provide for a reliable protection of the personnel, armaments and equipment against destruction by a shock wave, weak radiation, and penetrating radiation, as well as by radioactive and poisonous substances and by bacteriological means.

For this purpose, trenches, connecting trenches, and earth-works in places with loose soil are reinforced with poles, brushwood, and other materials. The reinforcements of the steep sides are coated with clay and soil, and in winter -- with lime in order to protect them from being set afire. Covered sectors of trenches, armor plating, and shelters of the light type serve as basic protection for the personnel. In the defense location of a company it is

equipped according to the following considerations: a covered and trench armored sector for each section; a shelter of the light type per platoon; and one shelter at the observation post of the company commander.

The personnel may stay without gas masks in the shelters of the light type. These are equipped with a filter-ventilation set. Such shelters are utilized mainly when the defense location is subjected to protracted radioactive contamination, or when the adversary employs poisonous substances for three hours or more. Here the personnel partakes of food and rests, and the aid is given to the wounded or stricken. To make shelters safe, these are tested systematically to ascertain whether they are hermetically sealed, especially after an artillery barrage by the adversary, or after an atomic explosion regardless of the distance from the location of the company at which it occurs. For testing within a shelter, as to whether it is hermetically sealed, one may employ an instrument of chemical reconnaissance and a radioactivity indicator. On the outside, this test can be made by means of smoke grenades.

The commander of the unit is responsible for the condition of the shelter. He determines the order and sequence of utilization of the shelter and also appoints the detail that maintains order in it, keeps an eye on the proper entrance into and proper exit from it, when it is hermetically sealed, and also advises the personnel about the employment of one or another means of mass destruction by the adversary.

The armored shelters are also hermetically sealed, but if they are not equipped with a filter-ventilating set, the personnel must don gas masks at the instant of a chemical attack and must keep them on for a considerable time, i.e., until the danger of being poisoned passes. In this connection it is desirable that filter-ventilating sets be set up also in blindages, but of a smaller gauge and output. If a filter-ventilating unit for a shelter has four filter absorbers, each of which permits passage of 50 cubic meters of air per hour, then it is possible to arrange an installation for the blindage that could clean 20-30 meters of air per hour. Such small-gauge filter-ventilating installations for blindages will be suitable for small units, since they can be easily assembled and disassembled, are convenient to transport and, most important of all, ensure the protection of a larger number of people directly in the location of the sections.

For the protection of armaments and mine-throwers, earthworks with covers and shields that can be thrown back are constructed, and for ammunition little ditches, niches and small cellars are prepared. Blindages or covered trenches are constructed for the personnel of the teams. Roofings over the slits are highly necessary on artillery firing emplacements.

The next measure of importance for the protection against

weapons of mass destruction, which must receive most serious attention in defense, is the full protection of the company by individual and collective methods of antichemical defense as well as by means of sanitary processing of the personnel, degassing (deactivation, disinfection) of weapons, combat equipment, and means of transportation.

Individual means of antichemical protection acquire very great significance, since the safety of the troops depends on their protective properties. That is why the condition of these means, especially of the gas masks, must always be high. It is necessary to adjust them carefully and to take care that the exhalation valves are not soiled, and that the connecting tubes are carefully tightened at the valve as well as at the gas mask canister. For testing the proper adjustment of the gas-mask helmets it would be expedient, if conditions permit, to let the entire personnel pass through special fumigation tents or through the poisoned atmosphere of field fumigation by poisonous smoke.

Circumstances may be such that it may be impossible to replace or supplement the used-up or damaged means of antichemical protection or to carry out their special processing. Therefore, supplies of protective means in defense should be on hand not only at battalion ammunition supply points but also in the company, directly in the positions of the sections. Supplies should be based on the following considerations: gas masks -- three to four per platoon; protective clothing (set No. 1) -- 50 percent for the personnel of the company; IPP [probably quarantine clearing station] -- 51-100 percent for the personnel of the company. In addition, it is also necessary to have a supply of various parts of gas masks (exhalation valves, connecting tubes, plugs.)

The effects of an atomic, chemical, or bacteriological assault by the adversary are nullified for the purpose of re-establishing, in a brief period, the combat readiness of the company and the destroyed installations.

For this purpose, the company commander organizes the rescue work; the extinguishing of fires that have enveloped the reinforcement of the steep sides of the trenches and connecting trenches; the clean-up [decontamination] and restoration of trenches, connecting trenches, earthworks, blindages, shelters (verification of their being hermetically sealed); dosimetric control of radiation and sanitary processing of the personnel; and also deactivation, degassing, or disinfection of armaments, earthworks, trenches, battle equipment, and means of transportation.

During the rescue operations, medical assistance is given to those who have suffered from the destructive factors of an atomic explosion and also to those heavily stricken by poisonous or bacteriological agents. If circumstances permit, those stricken are sent to the battalion medical center.

If, in consequence of an atomic explosion, insignificant cave-ins of tranches, earthworks and connecting trenches have taken

place within the company district of defense, and if reinforcements have caught fire, part of the personnel of the company is utilized for restoration of the engineering constructions, while the other part is at its assigned places, at the guns, in readiness to repulse an attack by the adversary.

In a radioactive contamination of a locality in the company's district of defense, or after the employment by the adversary of persistent toxicants, a partial sanitary processing of the personnel is undertaken. It is expedient to carry this out after a partial decontamination of armaments, and in case of a contamination by persistent toxic agents, a partial sanitary processing is carried out first, and after that a degassing of armaments. This work is carried out by the personnel directly in their positions by order of the units' commanders.

After an atomic, chemical, or bacteriological attack by the adversary, the company commander must evaluate the circumstances, find out about the conditions in the platoons and must report to the battalion commander. If the company had been subjected to strong contamination by radioactive media or persistent toxic agents and a partial processing is useless, then full processing is undertaken, for which purpose the company is removed from the contaminated district. An order for removal can be given only by a superior commander.

If the company has been, for a considerable time, in a locality contaminated by radioactive or bacterio-radioactive media, a dosimetric check-up of radiation of the personnel is carried out uninterruptedly so as to ascertain that no fighting man received a dose higher than the dose tolerable at a single radiation.

After all measures to stamp out the consequences of an atomic chemical, or bacteriological attack have been taken, the company commander initiates immediate measures for the refurbishment of the expended means of processing and of antichemical protection.

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